

IN THE CLAIMS

The claims pending in the Application are listed below for the Examiner's convenience.

Claims 1-9 (Canceled).

Claim 10 (Previously Presented): A method of forming an article comprising, impregnating and/or coating fibrous and/or granular substrates with a thermally polymerizable mixture of a multifunctional macromonomer and a radical polymerization initiator, and

thermally polymerizing the thermally polymerizable mixture to bind the fibrous and/or granular substrates and form the article, and

wherein the multifunctional macromonomer has a polymerizable content of at least one free-radically polymerizable unsaturated group selected from the group consisting of an acrylate group, a methacrylate group, a maleate group, a vinyl ether group, a vinyl group, and an allyl group.

Claim 11 (Previously Presented): The method of claim 10, wherein the substrates are selected from the group consisting of glass fibers, natural fibers, manufactured fibers, rock wool, core sand, and combinations thereof.

Claim 12 (Canceled).

Claim 13 (Previously Presented): The method of claim 10, wherein the molar mass M_w of said multifunctional macromonomer is in the range from 300 to 30,000.

Claim 14 (Previously Presented): The method of claim 13, wherein the molar mass M_w of said multifunctional macromonomer is in the range from 500 to 20,000.

Claim 15 (Previously Presented): The method of claim 10, wherein said multifunctional macromonomer is obtained by a process comprising co-reacting

- a) 0.5-2.0 equivalents of a 2- to 6-hydric alkoxyated alcohol with
- b) 0 to 1 equivalent of a 2- to 4-basic C_3 to C_{16} carboxylic acid and/or anhydride
and
- c) 0.1 to 1.5 equivalents of acrylic acid and/or methacrylic acid
- d) 0 to 1 equivalent of diol

to form a reaction product, and

reacting the reaction product with at least one epoxy compound.

Claim 16 (Previously Presented): The method of claim 15, wherein the process for forming the multifunctional macromonomer further comprises after reacting the reaction product with at least one epoxy compound, reacting the multifunctional-macromonomer with a polyisocyanate, optionally in the presence of a chain extender, to form a macromonomer comprising acrylate and polyurethane groups.

Claim 17 (Previously Presented): The method of claim 10, wherein said polymerization initiator is at least one selected from the group consisting of peroxides, hydroperoxides, peroxydisulfates, percarbonates, peroxyesters, hydrogen peroxide and azo compounds.

Claim 18 (Previously Presented): The method of claim 10, comprising 0.05% to 15% by weight solids of the polymerization initiator.

Claim 19 (Canceled).

Claim 20 (Previously Presented): The method of forming an article according to Claim 10, wherein the thermally polymerizable mixture is polymerized by heating to a temperature from 180 to 220°C.

Claim 21 (Previously Presented): The method of forming an article according to Claim 10, wherein the fibrous and/or granular substrate is impregnated with 2% to 35% by weight, based on the weight of the substrate, of the thermally polymerizable mixture.

Claim 22 (Previously Presented): The method of forming an article according to Claim 10, wherein the fibrous and/or granular substrate is impregnated with 5% to 25% by weight, based on the weight of the substrate, of the thermally polymerizable mixture.

Claim 23 (Previously Presented): A method of forming an article according to Claim 10, wherein the thermally polymerizable mixture consists of the multifunctional macromonomer and a radical polymerization initiator.

Claim 24 (Previously Presented): A method of forming an article according to Claim 10, wherein the thermally polymerizable mixture consists of the multifunctional macromonomer, a radical polymerization initiator, and at least one additive selected from the group consisting of polymerization inhibitors, solvents, dispersants, emulsifiers, pigments,

fillers, curing agents, antimigration agents, plasticizers, biocides, dyes, antioxidants, and waxes.

Claim 25 (Previously Presented): A method of forming an article comprising; impregnating fibrous and/or granular substrates with a thermally polymerizable mixture of:

(1) a multifunctional macromonomer having (a) at least one free-radically polymerizable unsaturated group selected from the group consisting of an acrylate group, a methacrylate group, a maleate group, a vinyl ether group, a vinyl group, and an allyl group, and (b) a double bond content in the range from 0.1 to 1.0 mol/100g of macromonomer, and

(2) a radical polymerization initiator; and

heating the impregnated substrates to a temperature from 180 to 220°C to polymerize the thermally polymerizable mixture and bind the fibrous and/or granular substrates.

Claim 26 (Previously Presented): The method of forming an article according to Claim 25, wherein the thermally polymerizable mixture consists of: (1) the multifunctional macromonomer, (2) the radical polymerization initiator, and optionally, (3) at least one additive selected from the group consisting of polymerization inhibitors, solvents, dispersants, emulsifiers, pigments, fillers, curing agents, antimigration agents, plasticizers, biocides, dyes, antioxidants, and waxes.

Claim 27 (Previously Presented): A method of forming an article according to Claim 10, wherein the multifunctional macromonomer has a double bond content in the range from 0.1 to 1.0 mol/100g of macromonomer.